

## Ethnobotanical Study of Medicinal Plants by People of Mukomuko Ethnic in Bengkulu

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### ABSTRACT

This study aims to document the medical plants and their use for traditional healing by the people in Mukomuko ethnic, Bengkulu, Indonesia. A research has conducted in March to April 2015, using observation and purposive interview methods. Herbarium specimens have collected and determined. Result study documented 78 species from 37 families of plants were reported to be used by them as medicines. There are 51 diseases traditionally heal using potential plant for curing. Furthermore, kunyit temung/ temulawak (*Curcuma xanthorrhiza*) is a kind of plant, is able to heal diseases, such as fertility, magh, stomachache. Malaria is kind of disease that can treat by many medicine plants (coconut, pedu beruang, annona, tapak liman). Karamuting (*Rhodomirtus tomentosa*) is the specific medical plant in Mukomuko ethnic. Leaves are the most part of plant used for healing.

**Keywords:** ethnobotanical, tradisional medicinal plant, Mukomuko ethnic, Bengkulu

### INTRODUCTION

Sumatra is one of the provinces that has many ethnic compared to West Sumatra that famous with their Ethnic of Minang. The ethnics are Kaur, Pekal, Pasemah, Rejang, Serawai, Enggano, Lembak, and Mukomuko. Mukomuko ethnic also called people "Muke-muke". Their home region is the northeast part of the province of Bengkulu. The area is already approach the border area of West Sumatra and Jambi Provinces. Some people there are the farmer, fisherman and seller. In their agriculture system they planting plant in the fields, besides it they also planting coconut, rubber, coffee and cloves. Native systems still looks well in daily life, and artistry look like Malay culture with influences by Minangkabau ethnics. (Melalatoa 1995).

The name of Mukomuko means face to face or "bersemuka" like 'discussion' for a consensus regarding a matter (Sarwono *et al.*, 2005). Mukomuko language includes the Malayo-Polynesian group but have some special changes. Its nasal sound usage among others "ng" behind the word ending vowel, for example a "cat" in Indonesia language is "kucing" become "kuncing" in Muko-muko, coffee or "kopi" became "koping", the ear or "telingo" becomes telingow, the door "pintu" becomes pintung (Anonymous, 2014).

The excavation of the "the history and customs of Mukomuko Regency" has done Sarwono *et al.* (2005) working with Bappeda Mukomuko Regency and produce a paper book that needs to be studied and listened to and further developed, among others, is writing about the culture in the traditional medicine of the tribe of Mukomuko. Mukomuko society as with other tribes in the Provinces of Bengkulu and Indonesia generally recognize and develop the knowledge and practices of traditional medicine. In that document written for example there are 35 types of medicinal ingredient name, but information about the benefits medicinal plants very little that is only a 3 Note the utilization be "holistic skin for diarrhoea, the root and the root of Earth tide lai as antimalarial, papaya leaves for mothers giving birth". Other information in the form of the name of the area difficult to access scientifically. So this certainly requires documentation of a more complete information again in order to follow up.

Studying about the plant in the area is still a bit, Yuniarti (2007) doing an inventory of plants utilized by the communities surrounding the forest on Gajah Makmur village South Mukomuko Subdistrict found 129 plants and 24 type (15%) is used as a medicine, this area was the transmigration. Sub City of Mukomuko, is one of 15 subdistricts in Mukomuko District (Wikipedia,2015), which is predominantly inhabited by the tribe of Mukomuko still holds traditional medicine culture, this can be seen from the presence of the public who use the services of experts on medicinal plants and traditional

medicine are commonly called witch doctor “dukun” for medical treatment. However documentation on this matter is far from there. For it is necessary preliminary studies to study the utilization of medicinal plants by ethnic Mukomuko in this area.

In terms of extracting the utilization of medicinal plants, to the area of the province of Bengkulu and Indonesia in General Area, surely this is urgently needed, because of the diverse ecosystems in Indonesia and diverse ethnic that inhabit these ecosystems would certainly have a diverse range of indigenous knowledge utilization to natural resources that exist to be the. Various medicinal plants research has been done against these tribes, among others, for example reviewing medicinal plants to support fertility utilized by the community of the city of Bengkulu, there were 99 types (Kasrina 2004). From the research turned out to be interreligious has extensive knowledge about plants that he wore, and way of life. From research into ancient manuscripts Kaganga tribe of Serawai, there were found 63 kinds of medicinal plants (Nurhamidah and Kasrina, 2006). On the community in the area of the Rejang Mountain Taba Penanjung has done surveys in 2007 found 107 kinds of medicinal plants, at the Tribal Village in the region Eight Lembak project Tanjung Terdana sub district of Pondok Kubang found 106 kinds of medicinal plants (Kasrina, Susanti 2013). In Batu Ampar Village near the area of protected forest Bukit Raja Mandara South Bengkulu Regency, Wiryono, Lipranto (2013) found 30 plant species of medicinal plants used 83 locally.

Worries of losing local plant utilization information from local community because of cultural influences and the erosion of knowledge from older generation to generation next then documenting this local wisdom should always be done. For example the results of the study on the ethnic Serawai in the village of Kampai Talo Ka Ga Nga script based, found only 39 types of utilized 63 types of that is in the script with the same benefits or not, this indicates the presence of missing information per generation (Kasrina, 2015).

Lately with the rise again the concept of "back to Nature"/treatment-based nature, or the development of herbal medicine where the Medical also there have been many who glance at this treatment, we must be documented with the local community knowledge hard-wired treatment that has been handed down in this succession and allegedly has great benefits too. Based on the things above, so need to do research on ethnic Mukomuko. Despite utilizing the medicinal plants of the first but the documentation and research of the treated diseases of plants and this is far from the lowliest there. This research aims to know the kinds of plants that are traditionally used to heal illnesses, the part that is used as medicine.

## MATERIALS AND METHODS

The content of this paper based on the exploration held in March to April 2015 in Mukomuko Ethnic, Kota Mukomuko District, Bengkulu province. Ethnobotanical information gained from interview with seven (7) key-informants in Mukomuko city. Herbarium specimens has collected and determined

## RESULT AND DISCUSSION

### Diversity of Medicine Plant

Research results obtained 78 types and 37 families used medicinal plants in the treatment of various diseases by the tribe of Mukomuko, which is dominated by the family *Zingiberaceae* (8 species), *Euphorbiaceae* (6 species), *Anacardiaceae* (5 species), *Poaceae* (4 species) and others. Diseases treated there are 51 disease. Different from that obtained on the Lembak 8 in Tanjung Terdana have 106 species, with 48 its dominating the family *Zingiberaceae* (9 species), *Asteraceae* (8 species), *Lamiaceae* (6 species), *Cucurbitaceae*, *Euphorbiaceae*, *Fabaceae*, *Malvaceae*, *Poaceae*, *Rubiaceae*, *Myrtaceae*, and *Solanaceae* (4 species). Diseases treated there are 68 diseases (Kasrina, 2013). This result also there are differences and similarities with records of research by Sarwono (2005) which renders the 44 types of medicinal plants. For example the equation of Plants konak putih/dukung anak/meniran (*Phyllanthus niruri*) is used for pain, diabetes, kidney, scabies, sores, information from Sarwono (2005) is not obtained. Holistic skin used to cure diarrhoea, Mukomuko town research results day now has yet to be informed.

The Diseases treated by Mukomuko there are two groups, the physical and metaphysical, it is the same as that obtained Sarwono (2005). The disease is a bone pain, diabetes, kidney, lumbago, difficult urination, pain when menstruation, fever, anemia, magh, diarrhea, rheumatism, gout, malaria, toothache, hypertension, ulcers, vaginal discharge, kudisan, pox, tonsils, cough, abdominal pain, hair fertilizer efficacious, deciduous menstruation, skin disease, digestive, gastric acid pelancar, anticancer, heat in, diarrhea, facilitate descent, can be busting body odor, vomiting, scars, shortness of breath asi, reproduce, Burns, canker sores, sore eyes, exposed spines, Burns, etc. The diseases are classified as a external and internal diseases. How the treatment is done by way of boiled and drunk, is applied, in a poultice, washed, worn bracelets beads made in the neck or made bracelets, melted, and stoped. The public still believe the diseases caused by disorders of the spirits on a young child avoid the disturbance of the creature's baby (her plants namely turmeric molai/bangle *Zingiber cassumari*; jerangau/Dlingo/*Acorus calamus*),

Plants are utilized there which is a crop cultivation and there are wild plants. *Zingiberaceae* is one of the cultivation plants. In previous studies, the lowliest and in other tribes, *Zingiberaceae*, has a fairly high level of usage, as it was in Mukomuko. The family of *Zingiberaceae* having the kinds of plants that the level it is used more broadly, as well as medicinal plants, plants that also serve as the ingredient of spice, seasoning, and views of the cultivation system this group very easily cultivated, produces fast and does not require difficult treatments (Suriawaria, 2000).

In addition to this disease that can be a medicine with plant species of the family is a mild disease which often suffered by the people of Mukomuko, appetite enhancer, magh colic, scabies, cough, sore throat, skin diseases, fever, sprains, makes it easy to get the offspring/fertility and prevent baby agitated spirits. These results there are similarities and differences with the Lembak eight tribes in the village of Tanjung Terdana is for example cold sore, cough, rheumatic pain, weakness and fatigue, rheumatism, sores, stomach pain, drug delivery, post and skin diseases, as well as used also for appetite enhancer medicine on children (Kasrina. 1995)

*Zingiberaceae* contains compounds, such as atsiri oil, fat, tannin, and resin. Atsiri oil can be stabilize nerve system, make us happy, appetite enhancer, and trough the diseases. This benefit because the atsiri oil can expedite circulation system, sedative, antiseptic, abtipleptic (lower temperature), carmintif (emetic fletus), appetite enhancer, absorption system, etc (Liferdi, 2008). So it can be used to treat a lot of healthy problem from small problem untill big problem, to tired, rematic, and breathing problem. And the seconder metabolic can hamper the patogen growth. (Wulandari dan Juwita, 2006).

Plants of *Asteraceae* also the third plants that used by Mukomuko tribe in Kota Mukomuko. Based interview with traditional docter, they have 5 plants, namely : *Elephantopus scaber* L (pasak bumi) that used to medicate malaria, anemia, and tonsil (amandel). According to Indah (2013), pasak bumi or tapak liman has a lot of benefits : malaria for children, fever, a cough, sprue (guam), dierhea, high temperature, and infection by maggot. Pasak Bumi containing terpenoid seconder metabolic and flavonoid as the antibacterial.

Medicinal plant of *Ageratum conyzoides* L. (rumput angit/bandotan) is used as a cough medicine, wounds (stop bleeding) and abdominal pain. According to Dalimartha (2006), herbaceous taste that has a slightly bitter, spicy and neutral. These nutritious plants stimulant, tonic, reliever fever (antipyretic), antitoxic, eliminates swelling, stops bleeding (hemostatis), deciduous menstruation, urination, and deciduous fart.

*Brucea javanica* (Bile bear/ Empedu beruang) is used as a remedy for malaria by the local shaman and is also used to treat local people. According to Dalimarta (2006), these plants contain chemical compounds, alcaloids, glycosides, and phenol, then fruit and leaves contain oil fatty acid and oleic acid, tannins, which helps stop the bleeding (hemostatis), kill the parasites, and antimalarial.

*Eclipta alba* (Urang aring), used like a fertilizer efficacious hair, plant functions as well as research conducted by Kasrina and Veriana (2014). *Gynura segatum* (leaves god/daun dewa), the plant used to treat wounds and hypertension. According to Indah (2013) plant *Gynura segatum*, can be used to treat wounds punch, bloody coughs, vomiting blood, leaves contain an essential oil, saponins, flavonoids, pharmacologic content and leaves are for anticoagulant liquefy or water down blood clotting, stopping bleeding, remove heat, and cleanse the toxins. Plant from family of *Asteraceae* is also widely found in the courtyard houses, in addition to plants from the *Asteraceae* also has so much

benefits in everyday life and also treatable disease is a common ailment suffered by the people of the tribe of Mukomuko town of Mukomuko district.

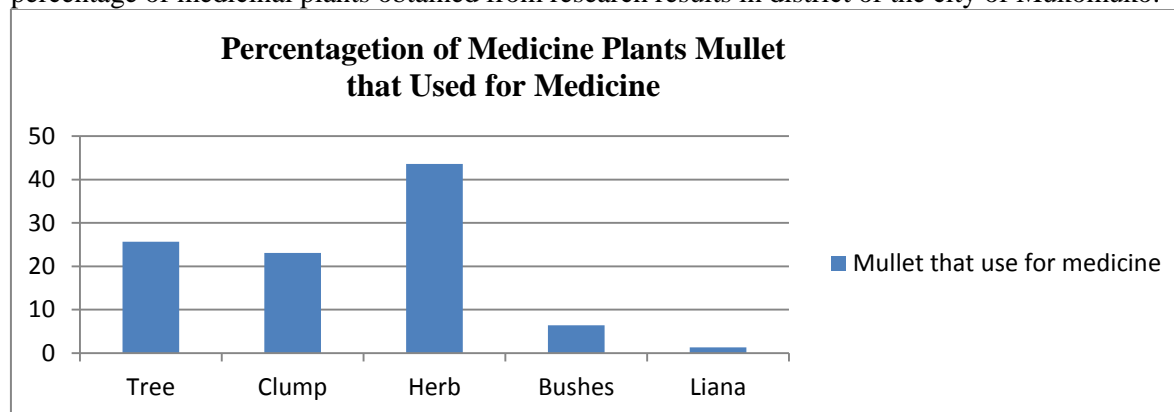
One of the diseases that commonly attack the community of Bengkulu is malaria. Malaria, which is a disease endemic in Sumatra. The results of the survey turned out to be plant there were four in Mukomuko society, leaf of annona, coconut fruit, roots and leaves a tapak liman/*Elaphantopus scaber*, Makasar fruit/pedung bears (pedung beruang). Lembak has 10 medicinal plants, namely: Sungkai, Sambiloto, Papaya, mahogany, Reeds, his whip horses, Caulis, Makasar, custard apples and Javanese poetry (Kasrina, 2013). The plants used as antimalarial since this village community has tried and believed that hereditary it is indeed efficacious as antimalaria, and plants that are found in this area.

A lot benefits of plants in the tribe of Mukomuko is "konak putih"/child support/Meniran/*Phyllanthus niruri* namely to remedy pain, diabetes, kidney, scabies, and wounds. Further plants "tumpang ayi" (*Peperomia pellucida*) for ulcers, Burns, acne, stomach pains and subsequent Temung/Turmeric (*Curcuma xanthorrhiza*) temulawak to appetite enhancer, fertility, magh and abdominal pain. From 7 informants, 100 percent used the same plant is the violet leaf, (eliminate menstrual pain, drug fever) stajam itam/double deer-*Justicia gendarussa* (rheumatism, shortness of breath, fever), 'selasih' *Ocimum basilicum* (heat loss), guava (vomiting, diarrhoea), *Passiflora foetida* "letup- letup"-(itching), betel "sirih" (nosebleeds, itching, vaginal discharge), the Crown of the gods/ "mahkota dewa" (Diabets, hypertension)," pacing setawar" *Costus speciosus* (skin disease and lowering heat)

Information of medicinal plants, some kinds of plants typical to use on this tribe/area in Bengkulu, namely: Karamuting, Rhodomirtus tomentosa, benefiting from this plant are for digestion, and wounds. The plant has indeed begun to rarely found.

#### Percentage of Madicine Plants Mullet that Used by Community of Mukomuko Tribe in Kota Mukomuko

Based on the mullet, the kinds of medicinal plants obtained from the results of the research are classified in 5 habitus: trees, shrubs, herbaceous, shrub and liana. The following is a running percentage of medicinal plants obtained from research results in district of the city of Mukomuko.



Grafic 1. Percentage of madicine plants mullet that used by community of Mukomuko Tribe in Kota Mukomuko In the Diagram, seen running percentage medicinal plants are utilized as medicine in Mukomuo tribe, trees 25.64% (20 species), clump 23.07% (18 species), herb 43.59% (34 species), 6.41% (5 plants), and liana i.e. 1.28% (1 species).

#### Organ of Plants that used by Community of Mukomuko Tribes in Kota Mukomuko

Seventy eight of kinds of medicinal plants that belong to the 34 tribe that found, known almost from all the organs of the plant are utilized, starting from the roots, seeds, fruit, leaves, latex, rhizome, umbi and of and stems. This can be seen in the following table (Table 1).

Various organs of the plant that utilized this assortment in the way of processing and its use against a disease that is treatable. However, the different plant organs utilized, there are some plants that are still in a tribe. The leaves of a plant organ that is most widely used as traditional medicine because the leaves are generally structured software, has a high water content (79 – 80%), and is the site of accumulation of photosynthesis, which contain many elements which worked for treatment.

Many of the substances contained in the leaves is an essential oil, phenol compounds, potassium and chlorophyll (Handayani, 2003). According to Dalimarta (2000), part of the leaf is widely used because many found the kinds of chemical compounds that are efficacious medicines, such as flavonoids, tannins, saponins, phenols, and alcaloid. In addition the leaves is also part of most of the plants so that if there are still some fall leaf leaves the others. Whereas in other parts of its chemical compounds less diverse types as well as the risk for the loss of one individual plants is very high. Research reports that others have also found parts of the leaf is widely used in the treatment. This is because the leaves are the most easy to find, easy to take, there is not much damage the plant growth if it is taken, and also according to Mahendra (2005), leaves contain compounds metabolic seconder that contains toxic compounds are so widely used in the world of medicine.

Table 1. Organ of Plants and Their Species

No	The Organ	Total Species of Plants
1.	Root	9
2.	Stem	13
3.	Leaves	44
4.	Tuber	1
5.	Latex	2
6.	Fruit	20
7.	Flower	20
8.	Rhizome	8

## CONCLUSION

There are 78 kinds of medicinal plants, which consist of trees, shrubs, and herbs used by the tribe of Mukomuko district city of Mukomuko, to treat 51 types of disease. Part of the plant used is the rhizome, leaf, fruit, all parts, root, stem, bark, seeds, flowers, umbut rods, and latex.

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